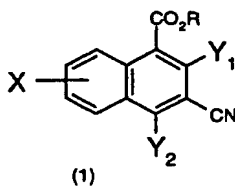


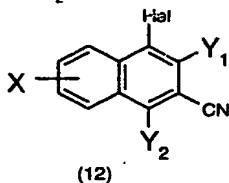
## CLAIMS

1. A process for preparing the compound of formula (1)



wherein X and/or Y<sub>1</sub> and/or Y<sub>2</sub> are independently H, cyano, nitro, trifluoromethoxy, trifluoromethyl, alkoxy, or alkyl and R is H or alkyl  
either

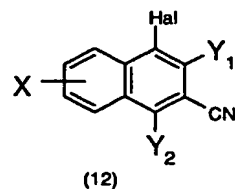
a) in the case where R=H, by metallo-dehalogenation followed by carboxylation of a  
compound of formula (12)



wherein X, Y<sub>1</sub> and Y<sub>2</sub> are as defined above, and Hal is Br, I or Cl

or

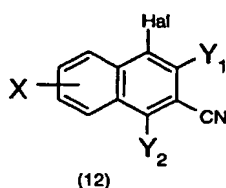
b) (in the case where R=H or alkyl) by palladium mediated carbonylation of a compound  
of formula (12)



with the proviso that the compound 1-iodo-3-cyano-2-methoxynaphthalene is excluded,  
followed by solvolysis.

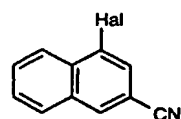
2. A process for preparing the compound of formula (1) according to claim 1 characterized in that step a) is carried out by treatment of the compound of formula (12) with an alkyl-lithium reagent followed by reaction of the lithiated intermediate with carbon dioxide and then acidification.

3. The compound of formula (12)



wherein X and/or Y<sub>1</sub> and/or Y<sub>2</sub> are independently H, cyano, nitro, trifluoromethoxy, trifluoromethyl, alkoxy, or alkyl and Hal is Br, I or Cl, with the proviso that the compounds 1-iodo-3-cyano-2-methoxynaphthalene and 1-chloro-3-cyano-2-methoxynaphthalene are excluded.

4. A process for preparing a compound of formula (12, Y<sub>1</sub>=Y<sub>2</sub>=X=H)



(12, Y<sub>1</sub>=Y<sub>2</sub>=X=H)

wherein Hal is Br, I or Cl

(i) by

- (a) treating malic acid (7) with oleum or alternative strongly acid dehydrating media to give coumalic acid (8);
- (b) esterifying coumalic acid (8) to give a pyrone ester (9);
- (c) brominating the pyrone ester (9) to give a 3-bromo coumalic ester (10);

(d) reacting the 3-bromo coumalic ester (10) with *in situ* generated benzyne followed by decarboxylation to give a bromonaphthoate (11); and

(e) converting/transforming bromonaphthoate (11) to 1-bromo-3-cyano naphthalene (12,  $Y_1=Y_2=X=H$ )

5

(ii)

by

(a) treating malic acid (7) with oleum or alternative strongly acid dehydrating media to  
10 give coumalic acid (8);

(b) converting coumalic acid (8) into coumalonitrile (25) and subsequently brominating to give 3-bromo-5-coumalonitrile (27); and then

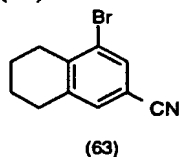
(c) converting 3-bromo-5-coumalonitrile (27) into 1-bromo-3-cyano naphthalene (12,  $Y_1=Y_2=X=H$ )  
15

by cycloaddition of *in situ* generated benzyne, followed by subsequent decarboxylation

or (iii)

by

20 1a) cyanation of 1,2,3,4-tetrahydronaphthalene followed by bromination to give compound (63)



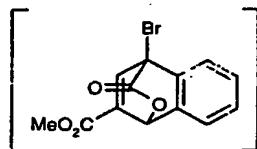
OR

25 1b) bromination of 1,2,3,4-tetrahydronaphthalene followed by cyanodebromination, followed by bromination to give the compound of formula (63); or

1c) bromination of 1,2,3,4-tetrahydronaphthalene followed by carboxylation followed by conversion to the 6-cyano-1,2,3,4-tetrahydronaphthalene followed by bromination to give compound (63); followed by

- 5 2) oxidative aromatization of compound (63) into 1-bromo-3-cyano naphthalene (12,  $Y_1=Y_2=X=H$ ).

5. A process according to claim 4 characterized in that in process (i) step (d) is carried out by reacting a 3-bromo coumalic ester (10) with *in situ* generated benzyne to give an  
10 intermediate (15)

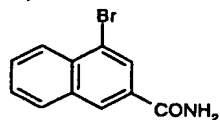


(15)

followed by decarboxylation to give a bromonaphthoate (11).

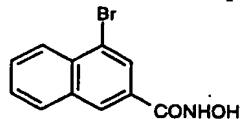
- 15 6. A process according to claim 4 characterized in that in process (i) step (e) is carried out by either

e1) reaction of compound (11) with ammonia to give compound (18)



followed by dehydration to give compound (12);

- 20 e2) reaction of compound (11) with hydroxylamin or a salt thereof to give compound (20);

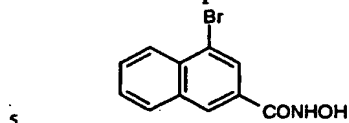


followed by dehydration to give compound (12);

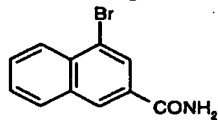
or

e3) direct conversion of compound (11) to compound (12).

7. The compound of formula (20)



8. The compound of formula (18)



10 9. 3-bromo-5-coumalonitrile (27)

10. The compound of formula (63)

